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Report to the Chairman, Committee on International Relations, House of Representatives

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EXPORT CONTROLS

Some Controls Over Missile-Related Technology Exports To China Are Weak

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National Security and
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The Honorable Benjamin Gilman
Chairman, Committee on
International Relations
House of Representatives

Dear Mr. Chairman:

As you requested, we are providing information regarding the Missile Technology Control Regime (MTCR) and U.S. missile technology-related exports to the Peoples Republic of China. Specifically, you asked that we determine (1) the nature and extent of U.S. dual-use and missile technology exports to the Peoples Republic of China, and the extent to which these items are exported to sensitive end-users; (2) the ability of the U.S. government to monitor China's compliance with conditions attached to U.S. missile technology-related exports and with the terms of the U.S.-China bilateral understanding on MTCR adherence; (3) the terms of the U.S.-China bilateral understanding on MTCR adherence and the degree to which the understanding commits China to adhere to the full range of MTCR commitments; and (4) the effectiveness of U.S. sanctions imposed on China.

Background

In 1987 the United States and its six major trading partners created the MTCR to restrict the proliferation of missiles and related technology.[1] The MTCR, the only multilateral missile nonproliferation regime, is a voluntary arrangement among countries that share a common interest in arresting missile proliferation. It is not a treaty. The regime consists of common export policy guidelines applied to a common list of controlled items that each MTCR member implements in accordance with its national legislation. Currently, 25 states are formal partners to the MTCR, while an additional 7 states, including China, have adhered or declared an intention to adhere to the MTCR Guidelines. (See app. I for a complete list of current MTCR partners and adherents or declared adherents.)

The MTCR Annex divides controlled items into two categories, Category I and Category II items. Category I items are subject to a strong presumption of denial and are rarely licensed for export. They include such items as complete missile systems; unmanned air-vehicle systems,

[1]The six trading partners were Canada, the former Federal Republic of Germany, France, Italy, Japan, and the United Kingdom.

such as cruise missiles; and certain complete subsystems, such as rocket engines and guidance sets. Category II (dual-use) covers a wide range of commodities, including propellants, test equipment, and flight instruments, that could be used for missiles or satellite launches. Category II items must be evaluated case-by-case against specified criteria and if judged to be destined for use in weapons of mass destruction (nuclear, chemical, or biological) are subject to a strong presumption of denial.

Federal law regulates the exports of missiles and related technology and requires licenses for the export from the United States of certain missiles, components, and technology specified in the MTCR Annex. The State Department supervises and directs all governmental arms transfers and licenses commercial arms transfers, including U.S. exports of missile items and technology. The Commerce Department licenses exports of dual-use goods and technology, which are controlled for missile technology reasons pursuant to the MTCR Annex to all countries. It has jurisdiction over production equipment for MTCR Annex items, which is controlled as either Category I or Category II, depending on the type of equipment involved.

Violators of U.S. export laws are subject to criminal and civil penalties and economic sanctions. Federal laws require the President to impose sanctions on U.S. and foreign individuals and entities that improperly conduct trade in controlled missile technology. Also, such sanctions would apply to a country with a nonmarket economy, such as China, to all activities of that government, with some qualifications (1) relating to the development or production of any missile equipment or technology and (2) affecting the development or production of electronics, space systems or equipment, and military aircraft.

Results in Brief

For fiscal years 1990 through 1993, the Commerce and State Departments approved a total of 67 export licenses worth about $530 million for missile-related technology commodities for China. Commerce approved 19 of 33 missile technology applications, valued at $6.5 million. During the same period, the State Department approved 48 of 85 export license applications with missile technology to China, valued at about $523.5 million. Most of this amount was for licenses in support of satellite projects—to be owned or operated by other countries or by multinational telecommunications corporations for or within China—for which the President waived applicable sanctions.

In general, export licensing process and monitoring controls for missile technology and dual-use export license applications cannot ensure that such U.S. exports to the Peoples Republic of China are kept from sensitive end users. Commerce and State Department officials acknowledged this point. Only controls for satellite-related exports to China seem sufficiently stringent to reduce risk to a minimum.

U.S. government officials believe that the United States generally performs adequate monitoring of China's compliance with the terms of its MTCR commitments. However, our review indicates that the U.S. end-use check program to monitor license conditions has only marginal effectiveness for exports to China. The Commerce Department's pre-license check/post-shipment verification program is inadequate, hampered by Chinese government reluctance to cooperate. Previously, we reported several weaknesses in this program concerning nuclear dual-use exports and the Commerce Inspector General reported weaknesses in the overall program.[2] The State Department's BLUE LANTERN end-use check program in China is minimal. The State Department rarely monitors the end use of missile technology exports that it licenses for China. However, because of sanctions restrictions, relatively few munitions licenses were granted to China in recent years. Most exports were provided for satellites intended for launch from Chinese boosters, which a separate Department of Defense (DOD) program appears to monitor closely.

Given the weaknesses in monitoring commodities after their export to China, it is all the more important that dual-use license applications be scrutinized in accordance with clear procedures before their approval. However, DOD officials are concerned that the Commerce Department might not be identifying and seeking interagency concurrence on all the export applications for China that might be missile technology-related.

The terms of the 1992 U.S.-China bilateral understanding on China's adherence to MTCR commit China, as a nonmember, to less restrictive requirements than currently apply to full members of the regime. China agreed to commit to only the MTCR Guidelines and Annex of 1987, in force at the time of its MTCR pledge, but not to the guidelines and annex as subsequently revised. China's 1992 commitments were articulated in a series of written U.S.-Chinese diplomatic exchanges. Although U.S. expectations for Chinese behavior were clear, the terms of China's 1992 MTCR commitments were limited and ambiguous. China's renewed

[2]Nuclear Nonproliferation: Export Licensing Procedures for Dual-Use Items Need to Be Strengthened (GAO/NSIAD-94-119, Apr. 26, 1994) and The Federal Government's Export Licensing Processes for Munitions and Dual-Use Commodities, Final Report, Special Interagency Review, Sept. 1993.

commitment to the MTCR, expressed in a signed bilateral agreement with the United States in October 1994, is more explicit than its 1992 commitment. While the 1994 agreement included China's pledge not to export particular missiles to other countries, China still does not accept the revised guidelines and annex.

The effectiveness of U.S. sanctions on China is unknown. U.S. government officials share no consensus on a definition of, or criteria for, measuring effectiveness of proliferation sanctions imposed on China. In addition, State Department officials said that State is not responsible for assessing effectiveness, noting that such sanctions are congressionally mandated and that the executive branch is not required by law to assess the effectiveness of such sanctions.

Extent of MTCR-Related Exports to China

MTCR-related licenses comprised a very small portion of total export license activity for China. However, DOD has questioned whether Commerce has been adequately identifying for interagency referral and review all the applications for the export of dual-use missile-related technologies.

The Commerce Department initially determines which commodities might contain missile technology. It independently determines that dual-use license applications do not involve missile technology, but if it believes that they might contain missile technology and the destination is a country of concern, Commerce is to refer these applications to the interagency Missile Technology Export Controls (MTEC) group. The group consists of working-level representatives of DOD, the Departments of State and Commerce, the Joint Chiefs of Staff, Arms Control and Disarmament Agency (ACDA), National Aeronautics and Space Administration, U.S. Customs Service, the intelligence community, and others at the invitation of the Chair and concurrence of the group. The MTEC's charter calls for it to meet as required to review license applications for U.S. exports of missile proliferation concern, referred according to agreed criteria. The MTEC evaluates the transfer in terms of the MTCR and U.S. nonproliferation policy. Commerce can also refer applications to the Central Intelligence Agency's Nonproliferation Center for information on the suitability of end-users.

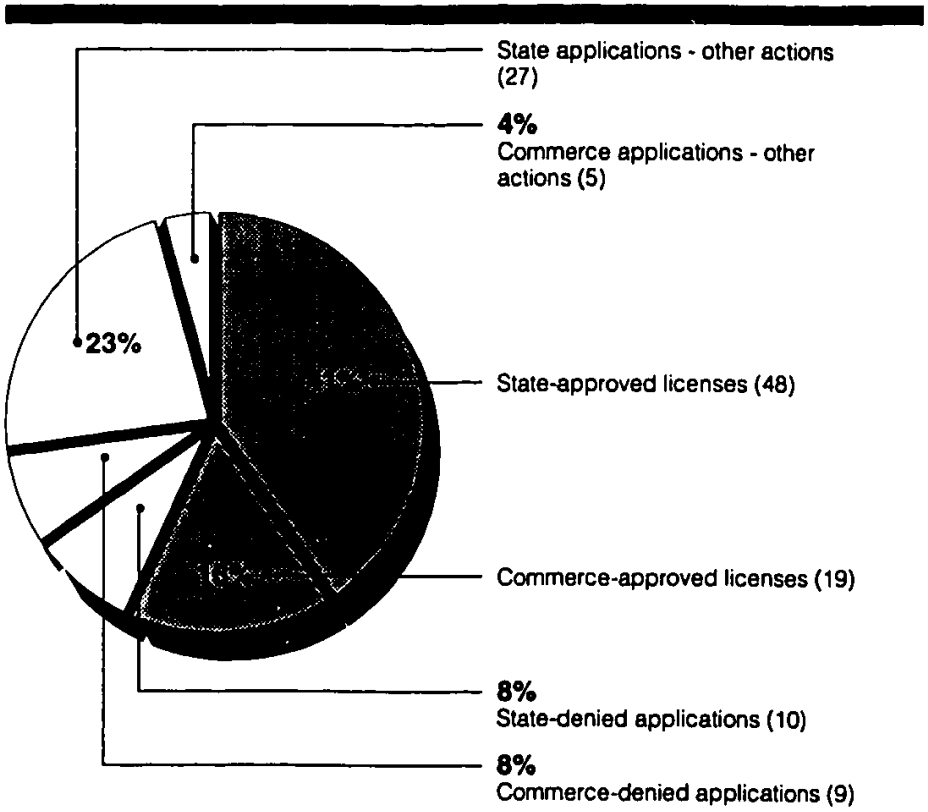
In addition to the multilateral MTCR, the Enhanced Proliferation Control Initiative (EPCI) of December 1990, a unilateral U.S. control, provides a "catch-all" control by directing that items going to destinations of concern,

regardless of whether they are on proliferation control lists, are to be referred to the interagency review process. The Initiative expanded missile technology export controls by requiring U.S. exporters to request an export license for any item that they know or have been informed by the U.S. government is destined for a project of proliferation concern. The Initiative was designed to give the U.S. government a safety net by allowing it to apply export controls when it learns about a pending transaction that risks helping a weapon program, but which is not explicitly covered by the current Commerce Control List.

To deter and detect the diversion of dual-use exports to proliferation activities, Commerce or other consulting agencies may request pre-license checks or post-shipment verifications. Pre-license checks are used to establish the legitimacy of the end user or verify the intended use of the export; post-shipment verifications are used to ascertain whether exported items are being used appropriately. The State Department operates a similar program of end-use checks, called the BLUE LANTERN program. The government may also seek assurances from foreign governments that items will not be diverted to proliferation-related uses.

The Commerce and State Departments approved a total of 67 export licenses worth about $530 million for missile-related items for China for fiscal years 1990 through 1993. Figure 1 shows the final action that each agency took for all export license applications for China involving missile technology during this period.

Figure 1: Missile Technology Export Licenses for China (Fiscal Year 1990-93)

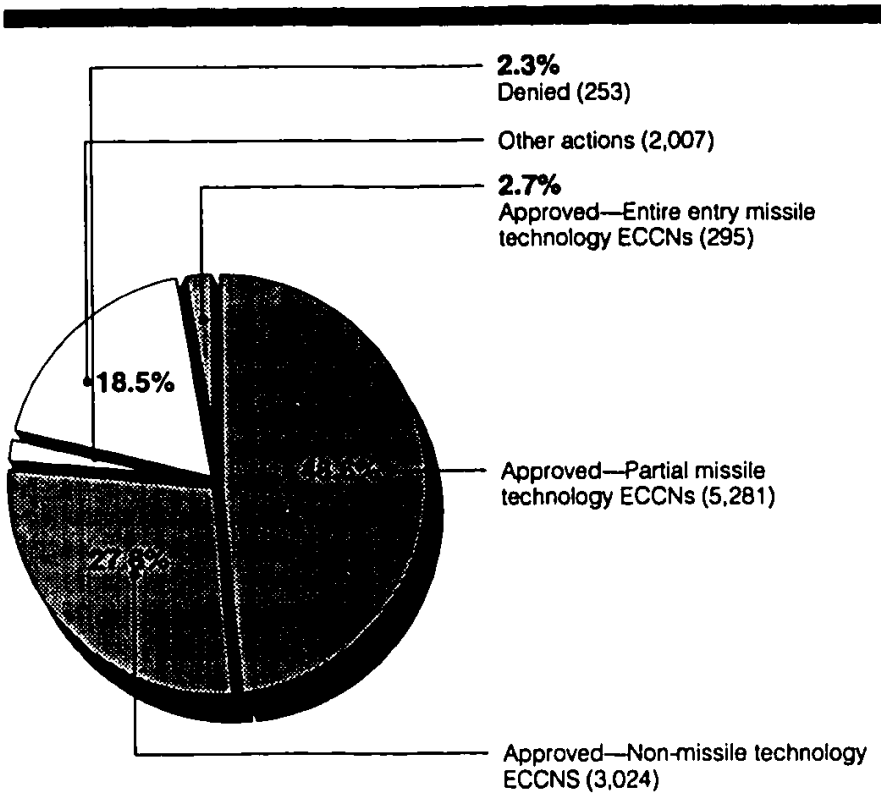


Note: Other actions include returned without action, revoked, suspended, or withdrawn.

Between fiscal years 1990 and 1993, the Commerce Department identified 33 export license applications for China as containing missile-related technology commodities. It approved, with interagency concurrence, 19 of these applications valued at about $6.5 million. During the same period, Commerce approved a total of 8,600 applications for China, valued at about $6.4 billion, out of a total of 10,860 applications for exports to China. Thus, Commerce-identified dual-use missile technology exports totaled less than 1 percent of all exports requiring individual validated licenses to China. (See app. III for a complete list of dual-use applications for China approved by Commerce after MTEC review.) Figure 2 shows the final status

for all 10,860 Commerce Department export license applications for China for fiscal years 1990 through 1993, with approved applications broken down by Export Control Classification Number category. At the time of our review, commodities that were subject to foreign policy controls on weapons delivery systems were grouped under 116 Export Control Classification Numbers (ECCNs) listed in the U.S. Export Administration Regulations. The Commerce Department also can refer items that are contained in other ECCNs to interagency review for potential missile technology.

Figure 2: Total Commerce License Applications for China (Fiscal Years 1990-93)



Notes: Missile technology ECCNs here indicate only that commodities were initially categorized under missile technology ECCNs, not that the final Commerce Department determination identified the necessity for missile technology controls.

Other actions include returned without action, revoked, suspended, or withdrawn.

Percentages do not total 100 percent due to rounding.

Between fiscal years 1990 and 1993, the State Department identified 85 export license applications for China as containing missile-related technology commodities. State approved, with interagency concurrence, 48 of these applications—40 with provisos—valued at $523.5 million. During the same period, State approved a total of 96 applications for other arms exports for China, out of a total of 369 applications. U.S. Munitions List license applications for China for the fiscal years 1990-93 period generally were related to (1) satellite equipment, (2) aircraft spare parts, and (3) technical data.

DOD Officials Are Concerned That They Do Not See All Commerce Department Missile Technology Applications

DOD officials have expressed concern that Commerce is not referring potential missile technology applications for interagency review. Commerce is solely responsible for deciding if dual-use export license applications are not missile-related technology. In those cases where Commerce determines that applications are not missile-related technology, it does not share all data with other agencies. There currently is no routine mechanism for DOD or other agencies to understand or question Commerce's analysis and conclusions on the full range of 8,600 approved licenses for China between fiscal years 1990 through 1993, aside from the 33 applications that Commerce referred for interagency review. As a result, there is little transparency into the dual-use missile technology licensing process by officials outside of the Commerce Department. Increasing the transparency of the license applications that Commerce reviews would have the result of either allowing other agencies to find deficiencies in Commerce's efforts at identifying missile-related exports or, conversely, of reassuring them that Commerce's review procedures are appropriate and properly implemented.

Commerce officials said that Commerce has sole responsibility for classifying commodities on the Commerce Control List. According to the officials, although it is routinely a clear-cut technical matter of checking the parameters on the Control List against the technical specifications of the item on the application, occasionally some interpretation is required. Nevertheless, making this determination in some cases is difficult and requires further review and consultation.

Commerce officials also said that, according to agreed interagency procedures, DOD reviewed all Commerce license applications for China for national security reasons and MTCR Annex items, except where there were specific delegations of authority to Commerce. However, high-level Defense Technology Security Administration officials said that they were

unfamiliar with referral criteria for MTCR Annex items and that there was no written agreement on such referrals between DOD and the Commerce Department. In fact, DOD requested a review of criteria and referral procedures in May 1994 and corresponded with Commerce several times on how to implement it. Also, the current and past chairmen of MTEC criticized Commerce's referral of missile technology cases for interagency review. The current chairman said that Commerce would not release to State the Licensing Officer's Operating Manual, which contains referral criteria. The officials further said that Commerce does not have the technical expertise to properly review missile technology applications and should not be pre-screening them.

Commerce Department officials believe that the question of referrals and other agencies' concerns has already been resolved by the executive branch's 1994 proposal to amend the Export Administration Act. According to Commerce officials, that proposal would have afforded all relevant agencies, including DOD, the right to see all dual-use license applications. However, the proposed legislation was not enacted and the executive branch has not implemented this provision. In November 1994, Commerce Department officials began discussing with the Defense Technology Security Administration means to implement the proposal.

While Commerce said that it refers virtually all applications for exports to China, as indicated above, our review of Commerce database information indicated that Commerce referred to DOD less than 49 percent of all approved applications for exports to China in fiscal year 1993, and referred to the Coordinating Committee for Multilateral Export Control less than 47 percent of all approved applications for exports to China for the same period.

In addition, a September 1993 report[3] by a joint team of four inspector general offices noted that there is no agreement between Commerce and most of the other federal agencies regarding which export applications should be referred for comments. Although not specifically addressing missile technology licenses, the report's findings emphasized the agencies' general concerns with Commerce's referrals of export licenses. It concluded until this issue is resolved, the agencies will not have adequate assurance that the license review process is working as efficiently and effectively as it should. The agencies involved—State, Commerce, DOD, and Energy—generally agreed with the concerns raised about interagency

[3]The Federal Government's Export Licensing Processes for Munitions and Dual-Use Commodities, Final Report, Special Interagency Review, Sept. 1993.

referral issues. (See app. II for information about the disposition of various applications by dollar value processed by the Commerce Department.)

Licensing Process and Monitoring Controls Cannot Ensure That U.S. Exports to China Are Kept From Sensitive End Users

Licensing process controls for dual-use and missile technology export applications cannot ensure that U.S. proliferation-related dual-use and munitions exports to China, aside from separately monitored satellite exports, are kept from sensitive end users. We did not find direct evidence of diversions of U.S.-supplied dual-use technology or of exports of commodities to China approved in contradiction of export licensing procedures. However, we noted that a DOD classified report indicated that diversions might have occurred. Also, our request for officials of the involved agencies to assess whether specific exports that did not receive interagency review might have benefited from it was denied. (See app. IV for a discussion of our methodology to identify such evidence and the limitations that the executive branch placed on our efforts to find such evidence.)

An important premise of the U.S. export licensing process is the ability to assess legitimate end uses and end users of U.S. technology exports. According to the MTCR Guidelines, in evaluating the transfer of MTCR Annex items, the licensing process will consider, among other factors, (1) the capabilities and objectives of the missile and space programs of the recipient state; (2) the significance of the transfer in terms of the potential development of delivery systems (other than manned aircraft) for weapons of mass destruction; and (3) the assessment of the end-use of the transfers.

Missile technology licensing procedures for the Commerce Department from the Licensing Officer's Operating Manual section labeled "MTCR Determination" require missile technology review if an application lists identified classified entities—end users in a country listed in a separate classified memorandum—as the end user and/or ultimate consignee, regardless of the reason for control. In addition, on any application, when the end use is missile-related, the end user is known to be involved in missile activities, or questions are raised, missile technology review is required. The procedures note that it is especially important to have detailed information on the end use.

Commerce Department procedures permit Commerce officials to refer license applications to the Central Intelligence Agency's Nonproliferation Center for assistance in identifying sensitive end users. However, the

Central Intelligence Agency recommended 22 general types of foreign end users that Commerce could exempt from Nonproliferation Center review. These types include some foreign government entities whose activities are usually self-explanatory, public service organizations, and some foreign trade organizations. Available data showed that about 31 percent of all 10,860 license applications for China during fiscal years 1990 through 1993 were referred to the Nonproliferation Center. However, Commerce officials said that this percentage would be higher because inconsistent recording of license application referrals by licensing officers precluded an accurate accounting of the number of applications referred to the Nonproliferation Center.

Officials from various U.S. government agencies indicated that it is difficult to determine which companies in China are truly privately owned and operated and which are adjuncts to the Chinese government. Sometimes, however, agencies within the intelligence community disagreed over the extent of the problem. A 1993 DOD report cited multiple examples of suspected diversion or use of U.S. civilian technology in China's aeronautics and astronautics industries. The Central Intelligence Agency's Nonproliferation Center characterized the report as overstating the case, but did not question the potential for diversion in many of the cases cited.

Information on Sensitive End Users Is Not Routinely Shared

Information that is available on sensitive end users in China is not always shared efficiently or routinely between the intelligence and licensing communities. In June 1994 we reported that, although State and Commerce each use an automated computer system to screen export applications for ineligible or questionable parties, they did not include on their watchlists many pertinent individuals and companies.[4] We also noted that the agencies do not routinely share names on their respective watchlists, and their procedures to add names to their lists and ensure that data is complete and current are inadequate. Commerce noted that, although it disagreed with the report's conclusions, it agreed to share with State all potentially pertinent parts of each agency's watchlist.

Also, there is no central database on sensitive end users of missile-related technology for routine intelligence or information-sharing with Commerce in the licensing or intelligence communities. Several U.S. government organizations, such as the Los Alamos and Lawrence Livermore National

[4]Export Controls: License Screening and Compliance Procedures Need Strengthening (GAO/NSIAD-94-178, June 14, 1994).

Laboratories, and organizations within DOD, independently maintain—or plan to create—databases containing sensitive end-user information. In fact, a May 1994 report by the Office of Technology Assessment noted that multiple agencies are already developing their own unique proliferation databases for internal use, rather than coordinating their efforts.[5]

U.S. Government Monitoring of China's Compliance With MTCR Commitments and License Conditions

U.S. government officials believe that the U.S. government generally performs adequate monitoring of China's compliance with the terms of its MTCR commitments not to export MTCR technology out of China. However, the U.S. government performs limited monitoring of China's compliance with conditions attached to U.S. missile-related technology exports.

The intelligence community has primary monitoring responsibilities of countries' adherence to MTCR commitments. The interagency Missile Trade Analysis Group analyzes intelligence information concerning missile proliferation and MTCR. The group consists of working-level representatives of DOD, the Departments of State and Commerce, the Joint Chiefs of Staff, ACDA, National Aeronautics and Space Administration, U.S. Customs Service, the intelligence community, and others at the invitation of the chair and concurrence of the group. U.S. government officials generally expressed confidence in U.S. monitoring abilities to detect violations of MTCR commitments not to export such technology. To the degree that Commerce and State monitor license conditions relevant to "no retransfers, resales, or reexports" of U.S.-licensed missile technology commodities, they share indirect responsibility for monitoring adherence to MTCR commitments.

Both the Commerce Department's pre-license checks and post-shipment verifications program and the State Department's BLUE LANTERN programs are restricted in China. They are restricted partly because the Chinese government does not accept the need to link cooperating with U.S. pre-license checks and post-shipment verifications in order to gain U.S. approval for Chinese export license applications. According to an Assistant Secretary of the International Trade Administration, Commerce has not given China a clear demonstration that if there is no pre-license check, an application would be rejected.

DOD, on the other hand, insists that it oversee foreign launches of U.S.-built satellites in China through its Technology Safeguards Monitoring Program.

[5]U.S. Congress, Office of Technology Assessment, Export Controls and Nonproliferation Policy, OTA-ISS-596, May 1994.

Limited Commerce Department Program

Commerce policy does not require pre-license checks be completed in order that an export license application be approved. Commerce data showed that it requested three pre-license checks for applications involving missile-related technology. Two were conducted and one was canceled. Commerce officials said that the application with the canceled pre-license check was approved after interagency review, while the other two applications were not. Commerce returned the second application without action and advised the applicant to apply to the State Department because it determined that the license application was under State's jurisdiction. The third application was rejected. Commerce officials said that the pre-license check for the approved missile technology application was canceled the same day it was requested.

Commerce officials noted that pre-license checks can be canceled for legitimate reasons. For example, one pre-license check was canceled after the U.S. Embassy in Beijing provided additional information on the transaction, according to Commerce officials.

In comparison, for all types of exports, the Commerce Department requested a total of 77 pre-license checks for China between fiscal years 1990 and 1993, and conducted 37 checks, or about 48 percent, while 22 pre-license checks were canceled for various reasons, and 18 were still pending at the time of our review. Compared to 20 other countries of proliferation concern, China had the lowest percentage of completed pre-license checks. Commerce records showed that nine of the export license applications whose requested pre-license checks were canceled received an approved license.

The U.S Embassy conducted no post-shipment verifications related to missile technology. One was requested for a missile technology export, but was canceled when the license expired without the shipment being made. In comparison, the U.S Embassy conducted one post-shipment verification with the authorization of the Chinese government out of a total of seven requested for all types of export items. Commerce officials indicated that a post-shipment verification also was requested and canceled for the one missile technology license with a canceled pre-license check noted above. MTEC dropped its request for the condition after a Commerce official said that it would be difficult to conduct the post-shipment verification in China. The group alternatively required the exporter to report to Commerce after it installed the item. At the time of this report, the export had not been shipped.

Commerce officials said that Commerce conducted few pre-license checks because of such factors as Chinese sensitivity over sovereignty issues and expense in time, dollars, and distances required to conduct pre-license checks. Noting that discussions were in progress with China on expanding pre-license checks and post-shipment verifications, Commerce officials said they expect no breakthroughs in the near future. According to these officials, Commerce has made continuous efforts for the past 10 years to reach an understanding with China on routinely allowing the United States such checks and verifications, without success.

The Foreign Commercial Service Officer at the U.S. Embassy in Beijing is responsible for conducting pre-license checks. However, he said that his role is split between conducting checks and his trade promotion activities. The export controls function is secondary to the trade promotion role. Although some Foreign Commercial Service Officers at consulates in China in the past year have been tasked and trained to conduct pre-license checks, they do not have the required backgrounds for this function and also face conflicts with their trade promotion duties. The Foreign Commercial Service Officer in Beijing said that those at the consulates would have difficulty conducting pre-license checks in China, unless they received well-written cables detailing what to look for.

There was little monitoring required of China's compliance with the conditions associated with five missile technology export licenses that included provisos as conditions of approval. Of the five licenses with conditions, only two required that the exporter provide subsequent documentation. In one case, receipt of the documentation would have initiated a post-shipment verification. The Commerce Department did no follow-up on this 1992 license until 1994, when it learned that the shipment was never sent. Commerce officials said that there would be no follow-up until receipt of the exporter's documentation, indicating that the shipment had been made. They also noted that the license would expire after 2 years, at which time Commerce would verify that the shipment had not occurred. The interagency MTEC Group, which recommended approval of the license with the proviso, did no follow-up to ensure that the condition was included as part of the license or that the post-shipment verification was ever done. The interagency group typically trusts the licensing agency to implement its recommendations, according to the group's chairman. In the other case, the exporter was required to report on its installation of equipment after it occurred. Commerce records indicate that the export had not been shipped at the time of this report.

Our previous report concerning end-use checks for nuclear dual-use items found systemic weaknesses in the pre-license check/post-shipment verification program for nuclear dual-use items. In the September 1993 special interagency report, which included China in its review, Commerce Department's Inspector General reported that there is no assurance that either pre-license checks or post-shipment verifications are achieving their objectives. We found some of the same conditions in China, such as insufficient information provided to Foreign Commercial Service Officers in requesting cables and misleading data in the Bureau of Export Administration's database for tracking the status of pre-license checks, as had been identified in these two reports.

State Department's BLUE LANTERN Program Is Minimal in China

The State Department's BLUE LANTERN end-use check program in China is minimal. State currently performs few BLUE LANTERN checks in China because relatively few Munitions List exports are licensed for China. State Department officials said that relatively few Munitions List licenses are granted to China because of (1) the "Tiananmen Square" sanctions, established by Public Law 101-246, which suspended exports of items on the U.S. Munitions List to military and security end users unless a presidential waiver is obtained and (2) existing International Traffic in Arms Regulations, which require approval of exports to China only as an exception to the standing U.S. policy of denial since China is a proscribed destination. Most of these exports involve satellite projects, monitored under the separate DOD program. According to a State Department official, most of the few remaining munitions items licensed to China are not militarily significant or are not amenable to post-license verification.

During the period from fiscal years 1990 through 1993, no pre-license checks for missile technology exports were requested by State. In comparison, three pre-license checks were requested for other non-missile export applications handled by State. Two of the requests were canceled and State issued the licenses, but they were never used. The State Department completed the third check. The State Department requested one post-shipment verification during this period for the application that had received the pre-license check, but could not verify the results.

In addition, most of the missile technology exports during the 4-year period involved satellite technology associated with launches of foreign-owned satellites on Chinese boosters. DOD's Technology Safeguards Monitoring Program provides for continuous monitoring of such exports while they are in China. From December 1989 through January 1993, DOD participated in monitoring five launch campaigns of

U.S. satellite equipment launched by Chinese rockets. Personnel from technical and engineering backgrounds, and experts on space systems and test ranges performed the monitoring.

China Recently Updated Its MTCR Commitments and Did Not Agree to Current Standards

China's 1992 commitments to the MTCR were limited and ambiguous. State Department officials agreed that the terms of China's commitments contained ambiguities. On the other hand, the terms of U.S. expectations for China's commitments were straightforward and unambiguous. Nevertheless, these expectations were based on some outdated MTCR standards, which differed from the changed standards subsequently agreed to by MTCR members. The different expectations remained unreconciled.

In October 1994, China renewed its commitment to the original MTCR Guidelines and Annex in a signed bilateral statement. This statement further committed China not to sell Category I ground-to-ground missiles and technology to any country. Moreover, China resolved a key ambiguity in its 1992 commitment by agreeing to define MTCR-class missiles using a U.S.-proposed concept.

The 1992 U.S.-Chinese understandings were based on a series of classified diplomatic exchanges. The United States established clear standards against which to measure Chinese behavior, even though it could not have been positive that the Chinese government agreed with the 1992 standards. Relative to the 1992 commitments, the October 1994 Chinese commitments are phrased in a jointly agreed manner and are more clearly stated.

MTCR partners' commitments to the regime include abiding by terms of the current MTCR Guidelines and Annex. These provide no payload threshold. China was committed, on the other hand, to only the original 1987 MTCR Annex and Guidelines in effect at the time of its original commitment. At that time, the purpose of the regime was to limit the spread of missiles and unmanned air vehicles/delivery systems capable of carrying a 500-kilogram (1,100 pounds) payload at least 300 kilometers (186 miles). MTCR partners revised the MTCR Guidelines in January 1993 to cover delivery vehicles for all types of weapons of mass destruction (chemical and biological as well as nuclear), regardless of their payload, and revised the annex, most recently in July 1994, to make its terms more specific.

Under the terms of its October 1994 commitment, China and the United States will conduct in-depth discussions concerning a Chinese commitment to the current MTCR Guidelines and Annex and prepare the way for eventual Chinese MTCR membership, according to a State Department official.

Effectiveness of U.S. Sanctions on China Is Uncertain

The effectiveness of U.S. sanctions on China is difficult to determine because, to date, no consensus on a definition of, or criteria for, measuring the effectiveness of proliferation sanctions imposed on China has been established. In fact, State Department officials said that they are not responsible for assessing effectiveness of proliferation sanctions, which are congressionally mandated, and that assessing them is not required in the Arms Export Control Act or other laws.

In June 1991, the U.S. government imposed sanctions on two Chinese entities because of their trade in missile technology. The U.S. government waived sanctions against these entities in 1992 when the Chinese government committed to observing the MTCR Guidelines. In August 1993, the U.S. government imposed sanctions on 10 Chinese entities, upon determining that they had transferred missile technology from China to Pakistan. However, in October 1994, the State Department announced that the U.S. government would lift these sanctions on Chinese entities in exchange for new Chinese missile nonproliferation commitments, including a reaffirmed commitment to the MTCR. These sanctions subsequently were lifted.

In addition, Congress legislated sanctions specifically against China in response to the June 1989 massacre at Tiananmen Square. These sanctions included suspension of (1) all exports of items on the U.S. Munitions List to China, including items for inclusion in civil products if intended for end users in Chinese military or security forces and (2) the license for the export of any U.S.-manufactured satellites for launch on launch vehicles owned by China. The President can waive either of these suspensions. In addition, exports of munitions items are approved for export to China only as exceptions to the standing U.S. policy of denial because China is a proscribed destination under the International Traffic in Arms Regulations. This prohibition also must be waived in order to approve an export.

State Department and ACDA officials attribute China's agreeing to the original MTCR as of March 1992 to the proliferation sanctions in place at

that time. ACDA officials and the State Department indicated that the 1991 proliferation sanctions on two Chinese companies were effective because China met the U.S. condition for suspending the sanctions—declaring adherence to the MTCR Guidelines and Annex.

Discussions with numerous experts, including those from involved U.S. government agencies, yielded several suggestions that effectiveness of sanctions could be measured in terms of (1) limits on exports to sanctioned entities, (2) changes in China's missile proliferation behavior, and (3) China's agreement to current MTCR Guidelines and Annex. During our review, we learned that:

- U.S. export licensing procedures call for automatically denying export licenses for sanctioned entities. Licenses for MTCR Annex items to sanctioned entities require presidential waivers of both the general missile sanctions and "Tiananmen Square" sanctions and must be reported to Congress. A number of such waivers were granted and duly reported.
- Several analysts saw no change in China's missile program or proliferation behavior resulting from the 1993 proliferation sanctions.
- The 1993 proliferation sanctions have not yet resulted in China's agreement to commit to the current MTCR Guidelines and Annex. Rather, China in October 1994 committed to further discussions on the MTCR, which will include the issue of a Chinese commitment to the current MTCR, according to a State Department official.

Recommendations

To ensure that the appropriate licenses are referred to the MTEC Group, we recommend that the Secretary of Commerce provide periodic reports to the interagency group on those dual-use licenses for China whose commodities are classified under ECCNs containing items subject to missile technology controls. The reports should include, as a minimum, license and ECCN numbers, names of the end user and/or ultimate consignee, end-use descriptions, and descriptions of the commodities to be licensed. We further recommend that the Secretaries of DOD, Commerce, and State and the Director of ACDA use licensing information contained in these reports to establish mutually acceptable criteria and guidelines for selection of other licenses for interagency review.

We recommend that the Secretary of Commerce establish criteria to determine under what conditions approval of dual-use technology exports to China should be conditioned on the successful performance of pre-license checks. Such criteria might include the nature and

proliferation credentials of the end user, the potential end uses of the commodities to be exported, or the favorable outcome of the check.

Views of Agency Officials

As requested, we did not request written agency comments. However, we discussed the results of our work with officials from DOD, the Departments of Commerce and State, and ACDA. Commerce officials said that the other agencies' characterizations of problems with its licensing application referral efforts were unsubstantiated and unfounded. However, State, DOD, and ACDA officials generally agreed with the information in this report.

Each of these agencies provided suggestions and comments to improve the clarity and technical accuracy of the report. We have incorporated their suggestions and comments into the body of the report where appropriate. We believe that implementing our recommendations would go a long way toward reconciling the concerns among the involved agencies.

Our work was performed from October 1993 through October 1994 in accordance with generally accepted government auditing standards. The scope and methodology for our review is discussed in appendix IV.

We plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies of the report to other interested congressional committees; the Secretaries of State, Commerce, and DOD; and the Director of ACDA. Upon request, copies may also be made available to others having appropriate security clearances and a need to know.

If you or your staff have any questions concerning this report, please call me on (202) 512-4128. Major contributors to this report are listed in appendix V.

Sincerely yours,

Joseph E. Kelley

Joseph E. Kelley
Director-in-Charge
International Affairs Issues

Contents

Figures

Abbreviations

ACDA	Arms Control and Disarmament Agency
DOD	Department of Defense
ECCN	Export Control Classification Numbers
EPCI	Enhanced Proliferation Control Initiative
MTCR	Missile Technology Control Regime
MTEC	Missile Technology Export Controls

Partners and Adherents to the MTCR

Table I.1: MTCR Partners as of October 1994

Argentina	Greece	New Zealand
Australia	Hungary	Norway
Austria	Iceland	Portugal
Belgium	Ireland	Spain
Canada	Italy	Sweden
Denmark	Japan	Switzerland
Finland	Luxembourg	United Kingdom
France	Netherlands	United States
Germany		

Table I.2: Declared Adherents or States Declaring Intention to Adhere as of October 1994

Brazil	**Israel**	**Russia**
China	Romania	South Africa
Ukraine		

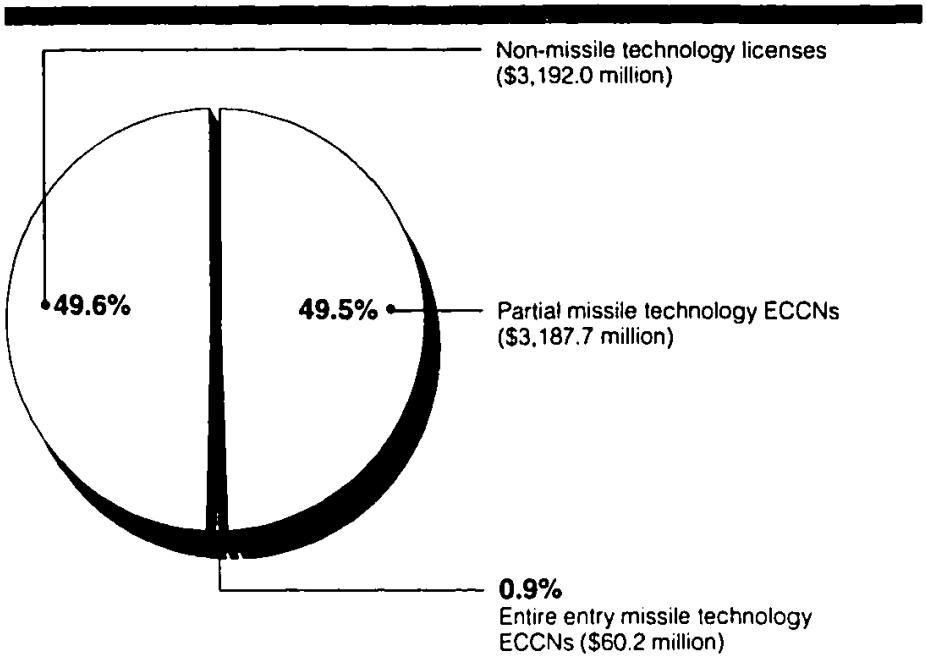
Data on U.S. Dual-Use License Applications for Exports to China

Commodities on export license applications that are subject to foreign policy controls on weapons delivery systems were grouped under 116 Export Control Classification Numbers (ECCN) listed in the U.S. Export Administration Regulations at the time of our review. Exporters are instructed to consult the "Reason for Control" paragraph in each number to determine the specific item subject to these foreign policy controls. In practice, the 116 ECCNs subject to control for missile technology reasons were divided at the time of our review into 85 "entire entry" ECCNs and 31 other missile technology ECCNs that would contain at least 1 item relevant to missile technology.

The following figures show the dollar values of U.S. export license applications and approved licenses for dual-use commodities to China for the period fiscal years 1990 through 1993.

Figure II.1 shows the value of exports to China, licensed by the Commerce Department, according to their ECCNs for fiscal years 1990 through 1993.

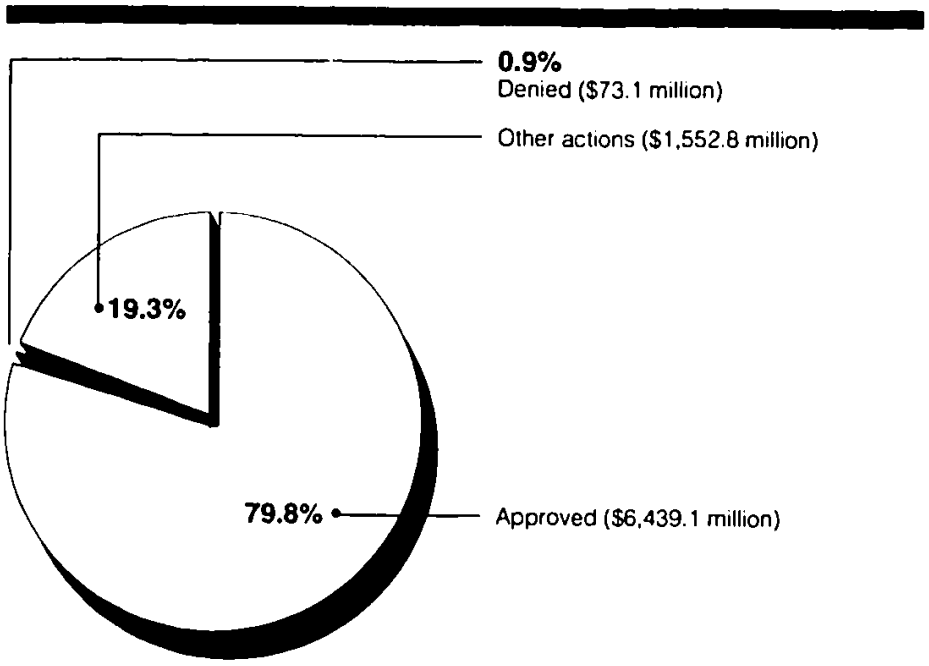
Figure II.1: Value of Commerce-Licensed Exports to China by Export Control Classification Number (Fiscal Years 1990-93, Dollars in Millions)



Note: Missile technology ECCNs here indicate only that commodities were initially categorized under missile technology ECCNs, not that the final Commerce Department determination identified the necessity for missile technology controls.

Figure II.2 shows the values of all Commerce Department license applications for exports to China for fiscal years 1990 through 1993.

Figure II.2: Value of All Commerce License Applications for China (Fiscal Years 1990-93, Dollars in Millions)



Note: Other actions include returned without action, revoked, suspended, or withdrawn.

Dual-Use Commodities Approved for Export to China Reviewed for Missile Technology Concerns Fiscal Years 1990-93

Numbers of approved licenses	ECCN	ECCN description
1	1518	Telemetering and telecontrol equipment suitable for use with aircraft (piloted or pilotless) or space vehicles, and test equipment specially designed for such equipment.
2[a]	1B21 (2)[b]	Other equipment for the production of fibers, prepegs, preforms, or composites.
1[a]	1B96	Other test, inspection, and production equipment for materials.[c]
1	1C22	Tungsten, molybdenum, and alloys of these metals in the form of uniform spherical or atomized particles of 500 micrometer diameter or less with a purity of 97 percent or higher for fabrication of rocket motor components; that is, heat shields, nozzle substrates, nozzle throats, and thrust vector control surfaces.
1	1C31	Propellants, constituent chemicals, and polymeric substances for propulsive propellants.
1	2A52	Pipes, valves, fittings, heat exchangers, or magnetic, electrostatic or other collectors made of graphite or coated in graphite, yttrium compounds resistant to the heat and corrosion of uranium vapor.[c]
1	2B40	Vibration test equipment.[c]
1	2B50	Spin-forming and flow-forming machines specially designed or adapted for use with numerical or computer controls and specially designed parts and accessories therefor.[c]
1	3A22	Radiographic equipment (linear accelerators) capable of delivering electromagnetic radiation produced by "bremsstrahlung" from accelerated electrons of 2 MeV or greater or by using radioactive sources of 1 MeV or greater, except those specially designed for medical purposes.
1	3A93	Electronic test equipment in Category 3A, not elsewhere specified.[c]
1	3A96 (2)[b]	Other equipment, assemblies, and components in Category 3A, not elsewhere specified.[c]
3	5A20 (4)[b]	Telecontrol and telemetering equipment.
1	5B01	Equipment specially designed for the "development," "production," or use of equipment, materials, or functions controlled by the entries in the telecommunications sections of Category 5 for national security reasons.[c]
1	6A22	Photosensitive components not controlled by ECCN 6A02.

(continued)

Numbers of approved licenses	ECCN	ECCN description
2	7A23 (2)[b]	Inertial or other equipment using accelerometers or gyros described in 7A21B or 7A22B, and systems incorporating such equipment and specially designed components therefor.
1	9B27 (2)[b]	Test benches or stands that have the capacity to handle solid or liquid propellant rockets or rocket motors of more than 20,000 pounds of thrust, or which are capable of simultaneously measuring the three axial thrust components.

[a]One license was issued for commodities under these two ECCNs

[b]Number in parentheses indicates total number of applications for commodities in that ECCN when more than one application was received.

[c]Commerce identified the commodity as not on the MTCR Annex

Scope and Methodology

To develop information for this report, we talked to cognizant officials and obtained documents in the Washington, D.C., area from the Departments of Commerce, State, and Defense, and at the Arms Control and Disarmament Agency, and the U.S. Customs Service. In addition, we discussed the MTCR, China, and missile proliferation issues with officials at the Defense Intelligence Agency, Central Intelligence Agency, National Security Agency, and the National Air Intelligence Center at Wright-Patterson Air Force Base, Ohio. We reviewed annual proliferation reports to Congress, a report on exports of sensitive technologies to Chinese sensitive end users, hard copy of a database on sensitive end users in China, and excerpts pertaining to China of the log of an MTCR interagency group. We also talked with officials at the Lawrence Livermore National Laboratory in Livermore, California, and Los Alamos National Laboratory in Los Alamos, New Mexico.

We reviewed files and talked with U.S. government officials at the U.S. Embassy in Beijing, China, and the American Consulate General in Hong Kong. In addition, we met with officials of the Chinese government in Beijing, China, to discuss U.S. export controls and U.S. sanctions on China. Also, we discussed export controls, missile proliferation issues, and potential diversions of U.S. missile technology into China with Hong Kong government officials.

To assist us in identifying sensitive end users in China receiving missile technology, we provided a sample of export licenses drawn from the Commerce Department's Export Control Automated Support System and approved by the Commerce Department to teams of analysts at the Defense Intelligence Agency and National Security Agency. The licenses were categorized under ECCNs designated as controlled for missile technology reasons. The analysts provided some information on sensitive end users, but the Commerce Department, after a technical review of the data, said that the license applications did not involve restricted missile technology.

To assist us in performing an independent technical evaluation of Commerce Department license approvals, we originally requested three teams of analysts from the Defense Intelligence Agency, National Security Agency, and Defense Technology Security Administration to indicate if the available information on specific exports and technology might have suggested the need for interagency review. This was important because the Commerce Department makes unilateral determinations that license applications are not MTCR-related and, therefore, do not require full

interagency review for approval. We also asked that they identify sensitive end users among the listed ultimate consignees on the applications to be provided. After we presented this request to the teams of analysts and one team agreed to provide this analysis, we were told that a high-level interagency meeting of involved agencies resulted in directing the agencies of the three teams not to provide an analysis of the need for interagency review because it was not within their authority to do so. Consequently, two teams agreed to perform the analysis of sensitive end users only. As a result, we were unable to benefit from the expertise of the technical specialists in assessing the technology of the sample of licenses and the appropriateness of Commerce Department decisions. In addition, the agency of the third team of analysts did not decide within our required timeframes whether or not it would participate in the requested analysis.

To evaluate the Commerce Department's pre-license check/post-shipment verification program in China for dual-use items, we reviewed records at both the Commerce Department in Washington, D.C., and at the U.S. Embassy in Beijing. We also talked to officials at both locations. Our review included gathering statistical data and reviewing cable traffic on checks and verifications done in China for all types of technology for the period of fiscal years 1990 through 1993. This was necessary, in part, because Embassy records identified many more checks being done for missile technology concerns than shown by Commerce records. Commerce Department officials said that their records were authoritative.

Appendix V

Major Contributors to This Report

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